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Foreign language vocabulary learning with mobile technologies

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Abstract

The importance given to foreign language with the development of information and communication technologies has led innovations in teaching activities. New modern ways have been sought for the use of information technologies in foreign language courses and how these technologies to be transferred in more effective and engaging way. In this study, the effect of the multimedia content integrated to learning materials using 2D barcode technology to vocabulary learning and students' ideas about this new learning environment were investigated. 40 students from Gazi University, Department of English Language Teaching participated to the study and they separated to 2 groups randomly. Learning content is limited with the 84 words contained in course book. Mobile content has been presented to the students with 2D barcodes placed to the pages of the book. The achievement test that measures the vocabulary learned was applied to the students before the study as pre-test and after the study as post-test. Participants have used the course book and mobile learning material for two weeks. In conclusion, mobile assisted learning environment has increased students' level of vocabulary for the target words. Students' opinions about this new environment supported the results.

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1. Introduction

There is a necessity to learn at least one foreign language in today's world. The importance of learning English language which is the mutual communication language of the society for countries that have different languages has been improved in recent years. In our country, children begin to the foreign language education at 4th grade, this means at the ages of 9 and 10. There are compulsory English language educations for one year in most of the universities as preparation class and this education prepares students to the academic, social and business life to learn and speak English.

Preparation class English lessons are set up on four basic skills in learning a foreign language. These are listening, reading, speaking and basic writing skills. Our education system tries to teach all these skills as a whole but vocabulary learning is a part of this program and also it is prerequisite for language learning. Vocabulary learning and teaching is very important as a part of foreign language knowledge. Students in our country have difficulties while speaking in English and although they took courses in English from early years they cannot communicate in

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English properly. So there is a necessity to increase the researches about the vocabulary learning and teaching processes in our country.

Vocabulary learning is a complex and gradual process. Because of this reason it will be appropriate to use different approaches in the activities. The important point of the vocabulary learning is the necessity of learning the words with different aspects. If a person's vocabulary knowledge is richer, then s/he can better understand the structure of the foreign language.

2. Purpose of the Study

The research aims to increase the vocabulary knowledge of the students who learn English as a foreign language with a mobile device in the lesson. The effect of the mobile supported language learning environment on the vocabulary learning of students and opinions of the students are examined in this study.

In the literature, there are a lot of studies about presenting the instructional materials like vocabulary teaching using the short messaging service (Nah, White and Sussex, 2008), short video conferences and online and offline podcasting. Also this research is important because of the usage of a new concept; Microsoft Tags in this field.

3. Questions

The research tries to find out answers to these questions:

1. Is there a significant difference between the pre-tests and post-tests of the students' vocabulary learning achievement?
2. What are the opinions of the students about the mobile learning environment and its aid for the learning?
3. What are the opinions of the students about the Microsoft Tag usage in this study?

4. Method

Mixed Study Research method is used in this study. Mixed method is a combined method which used in a research for data collection and analysis with both quantitative and qualitative research methods (Creswell, 2002). Explanatory Design (Cresswell, 2002) from mixed research designs is used in this study. Both quantitative and qualitative data is collected with this method. One group pre-test post-test design is used to collect quantitative data.

4.1 Participants

Research has been done with 40 students in 2 groups selected with purposive selecting method. Students are from Gazi University Faculty of Education English Language Teaching Department. Purposive participant selection is used because of the appropriate target group for the problem, accessibility to data and controlling the participants. Students are between 18 and 21 ages.

4.2 Mobile Learning Environment

Printed course book, online learning material and Microsoft Tag technology are used together in this developed mobile learning environment. The main purpose is providing students to learn the words in the course book faster and more effective. Mobile vocabulary content and printed course book pages are related with each other and presented for use. Definitions of the words in course book are given in mobile learning environment and Microsoft Tag technology is used to reduce the physical distance between two environments. Students scanned the Microsoft Tags on the pages with mobile devices and displayed the words' definitions and images related with the words in the course book.



Figure 1. Mobile learning environment

4.3 Procedure

Mobile learning environment combined from printed course book and mobile devices is used in this study to support vocabulary learning according to English lesson curriculum. Oxford University press “New Headway Pronunciation Course (Elementary)” book is used as the course book (Sarah Cunningham and Peter Moor, 2010). Instructional material is limited with the 7th chapter of the course book. Only cell-phone is used as mobile device in the study. Mobile devices used by students are mostly smart phones and communication within the classroom is provided via wireless connection. Students used the mobile learning environment to learn the course book vocabulary in classroom activities. The whole study was completed in one week, 14 course hours.

5. Findings

5.1 Students' Pre-test Post-test Scores

Students' pre-test and post-test scores of the academic achievement test about their vocabulary knowledge analyzed with related samples t-test. There is a significant difference between pre-test and post-test results after the analysis [$t_{(39)}=2.745$, $p<0.05^*$].

Table 1. Students' academic achievement pre-test post-test score comparisons t-test results

	n	X	S	Sd	t*	p
Pre-test	40	61.23	18.751	39	-2.632	0.008
Post-test	40	70.01	19.621			

* $p<0.05$

In Table 1, there is a significant difference between participants' vocabulary learning achievements before the study ($X=61.23$, $S=18.751$) and after using the mobile learning environment ($X=70.01$, $S=19.621$). Mobile supported foreign language learning environment indicated that it can increase the students' vocabulary knowledge and contribute students to learn targeted words.

5.2 Students' opinions about the contribution of the mobile environment to vocabulary learning

“What are the benefits of the vocabulary learning with mobile learning environment for you?” question has been asked to the students in data collection form. Students’ opinions collected from the forms and categorized. They are given in Table 2.

Table 2. Students’ opinions about the benefits of the mobile learning environment

Opinion	Frequency(f)	Percentage (%)
Not only see the word but also see the definition and other objects related with the word	13	32.5
Supporting the words with pictures	15	37.5
Providing individual study	12	30
Total	40	100

In parallel with learning with images, Danan (1992) got the result that if an image related with the word is used while studying foreign language, vocabulary learning can occur more effective and permanent. Chun and Plass (1996) studied vocabulary learning in their research and they found that students who study with picture and text together remember better than students who studied with only text. Related with the Paivio’s dual coding theory (1986), text based definitions and images in mobile learning environment provide the advantage that both image and text based presentations can be learned together.

5.3 Students’ opinions about Microsoft Tag usage in lessons

“What are the benefits of the Microsoft Tag technology which integrates the mobile learning environment to the course book for you?” question is asked to the students in the data collection form to get the opinions of the students. Answers are analyzed and showed in Table 3.

Table 3. Students’ opinions about the benefits of the Microsoft Tag usage

Opinion	Frequency(f)	Percentage(%)
Easy to access the information	25	62.5
No need to enter data to the device	10	25
Usable in anyplace	5	12.5
Total	40	100

It is thought that Microsoft Tag technology is beneficial by the students because of it removes the distance between printed material and digital learning environment and provides faster and direct access to the online environment. Microsoft Tag which moved forward to computer aided learning has some advantages and this makes its educational potential more powerful. Also it can be thought that this technology creates a curiosity on students and this can motivate them about vocabulary learning.

6. Discussion

There is a significant difference between post-tests in favor of the students who studied with mobile supported foreign language learning environment. Students’ opinions also support these results. Mobile learning environment provide the advantages that learning with images, learning the word with different aspects and individual learning. Addition to the text based definitions, images related with the words help students to learn both image and text based presentations together.

Students show the mobile device usage as innovative and funny applications in vocabulary learning. Mobile learning environment created curiosity for students and made the vocabulary learning activity more attractive with motivating them in positive way.

Microsoft Tag which is a part of the mobile learning environment connects the digital and printed materials. Microsoft Tag which supports using the printed material and mobile learning environment is also beneficial because it prevents mistakes while entering data to the mobile devices (Özdemir, 2010). It is understood that with the help of the Microsoft Tag accessing the instructional materials in online environment is easier and faster. Because of the

information in Microsoft Tag is hidden, it draws attention of the students and motivates them to use the mobile device in learning.

7. Recommendations

Although the instructional material is an internet based environment, it is limited with only related course activities. Even though people who learn in life-long learning frame have access to the mobile learning environment anywhere and anytime, because of they have no internet connection with the mobile device out of the classroom this advantageous environment cannot be used enough. In similar studies, accessibility to the materials out of the classroom hours can be provided and academic achievements can be increased more. Mobile learning material used in this study contains vocabulary from only some of the chapters of the course book. Similar to this study, a research handles wider content from the course book can be done. Content in mobile learning environment contains limited amount of definitions. Mobile learning content can be richer to support vocabulary learning. Mobile devices can be designed also for speaking and writing activities and similar to this study they can be used in classroom activities.

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